IN THE SPECIFICATION

Please amend the specification from page 4, line 23, through page 7, line 8, as follows:

The consuming current detect unit 10 comprises a current detecting resistor R1 for detecting the consuming current, and ~~an~~ a first operational amplifier 12 for amplifying the consuming current detected by the current detecting resistor R1. The signals from the both ends of the current detecting resistor R1 are input respectively to a noninverting terminal (+) and an inverting terminal (-) of the first operational amplifier 12, and then are amplified.

The recharging current detect unit 40 includes two current detecting resistors R2 and R3 for detecting the battery recharging current, and ~~an~~ a third operational amplifier 42 for amplifying the battery recharging current detected by the current detecting resistors R2, R3. The third operational amplifier 42 compares and amplifies the signal detected by the current detecting resistor R2 that is connected between the battery 60 and ground, and the signal detected by the current detecting resistor R3. Herein, the former signal is input to the noninverting terminal and the latter signal is input to the inverting terminal of the third operational amplifier 42.

The recharging control unit 30 comprises an integrator 32 for smoothing the PWM control signal, a switching control portion 34 for outputting a switching control signal by comparing the output signal from the integrator 32 with the battery recharging current, and a switching portion 36 for switching the received consuming current and transmitting it to the battery 60 according to the switching control signal output from the switching control portion 34. The switching control portion 34 comprises ~~an~~ a second operational amplifier 34 for amplifying signals, in which the non-inverting terminal is connected to the converted DC signal of the PWM control signal output from the integrator 32, and the inverting terminal is connected to the battery recharging current detected by the recharging current detect unit 40 (i.e., the

output of the third operational amplifier 42). In addition, the switching portion 36 comprises a transistor (TR) to respond to the output signal from the second operational amplifier 34.

The battery charging unit 100 further includes a display means 70 for displaying the recharging state of the battery 60. As the display means 70, a light emitting diode (LED) 70 can be used. Other display devices, well known to those skilled in the art, can also be used as display means 70.

The microprocessor 20 controls the overall operations of the battery charging unit 100, and specifically, the microprocessor 20 outputs the PWM control signal to the integrator 32 so as to control the recharge of the battery 60 according to the consuming current, and operates the LED 70 according to the recharging state of the battery 60.

FIG. 3 is a flowchart for illustrating in detail the process of the microprocessor in FIGs 1, 2. If DC power is supplied from the adapter (S310), the microprocessor 20 first detects the consuming current by means of the output signal from the first operational amplifier 12 that amplifies the signals of the both ends of the current detecting resistor R1 (S320). With the consuming current detected, the microprocessor 20 outputs the PWM control signal to the recharging control unit 30 in accordance with the consuming current so that the recharging current is supplied to the battery 60 (S330). The integrator [[32.]] 32, located within the recharging control unit [[30]] 30, smoothes and receives the PWM control signal and outputs a DC signal to the second operational amplifier 34. The second operational amplifier 34 transmits the signal reduced through the resistor R4 to the base of the transistor TR, and then the transistor TR switches the consuming current that is applied from the adapter, to the battery 60 according to the DC signal output from the ~~operational amplifier~~ integrator 32. The transistor TR is turned on according to the magnitude of the initial consuming current, as the consuming current increases/decreases (step S340), the microprocessor 20 again outputs (continuously) the PWM signal, but the duty cycle is

varied according to the increase/decrease of the detected consuming current (S350). FIG. 5 shows the change of the PWM signal duty cycle output from the microprocessor 20 as the consuming current increases/decreases. When the microprocessor 20 transmits the PWM control signal with the changed duty cycle, the transistor TR switches the consuming current to the battery 60, in the amount adjusted in proportion to the changed duty cycle of the PWM control signal.

Therefore, as the consuming current is supplied to the battery 60, battery recharging is performed. Concurrently, the microprocessor 20 detects the battery recharging current while the battery 60 is recharged, using the current detecting resistor R2, R3 and the third operational amplifier 42 (S340). The signal that represents the comparison between the battery recharging current and the current detected by current detecting resister R3 is input to the inverting terminal (-) of the second operational amplifier 34 to be used for switching control, along with the DC signal which is output from the integrator 32. The microprocessor 20 is able to recognize the battery recharging capacity according to the battery recharging current as detected. Accordingly, when the detected battery recharging current reaches a predetermined current level ("Yes" path from decision step S360), the microprocessor 20 displays a message through the LED 70 (S370) that battery recharging complete. If, however, the recharging current does not equal the setup current, the method returns to continuously detecting the consuming current and battery recharging current step in step S340 ("No" path from decision step S360).